

## **Abstract**

A configurable matrix receiver comprises a plurality of antennas that detect one or more signals. The antennas are coupled to a configurable matrix comprising a plurality of amplifiers, one or more switches that selectively couple the amplifiers in series fashion, and one or more  
5 analog-to-digital converters (ADCs) that convert the output signals generated by the amplifiers to digital form. For example, in one embodiment, a matrix comprises a first amplifier having a first input and a first output, and a second amplifier having a second input and a second output, a switch to couple the first output of the first amplifier to a the second input of the second amplifier, a first ADC coupled to the first output of the first amplifier, and a second ADC  
10 coupled to the second output of the second amplifier. In one embodiment, the signals detected by the antennas include magnetic resonance (MR) signals.